US Army Corps of Engineers
Rock Island District

Defense Environmental Restoration Program
For
Formerly Used Defense Sites
Ordnance and Explosives Waste

U.S. Army Defense Ammunition Center and School
Savanna, Illinois

Archives Search Report

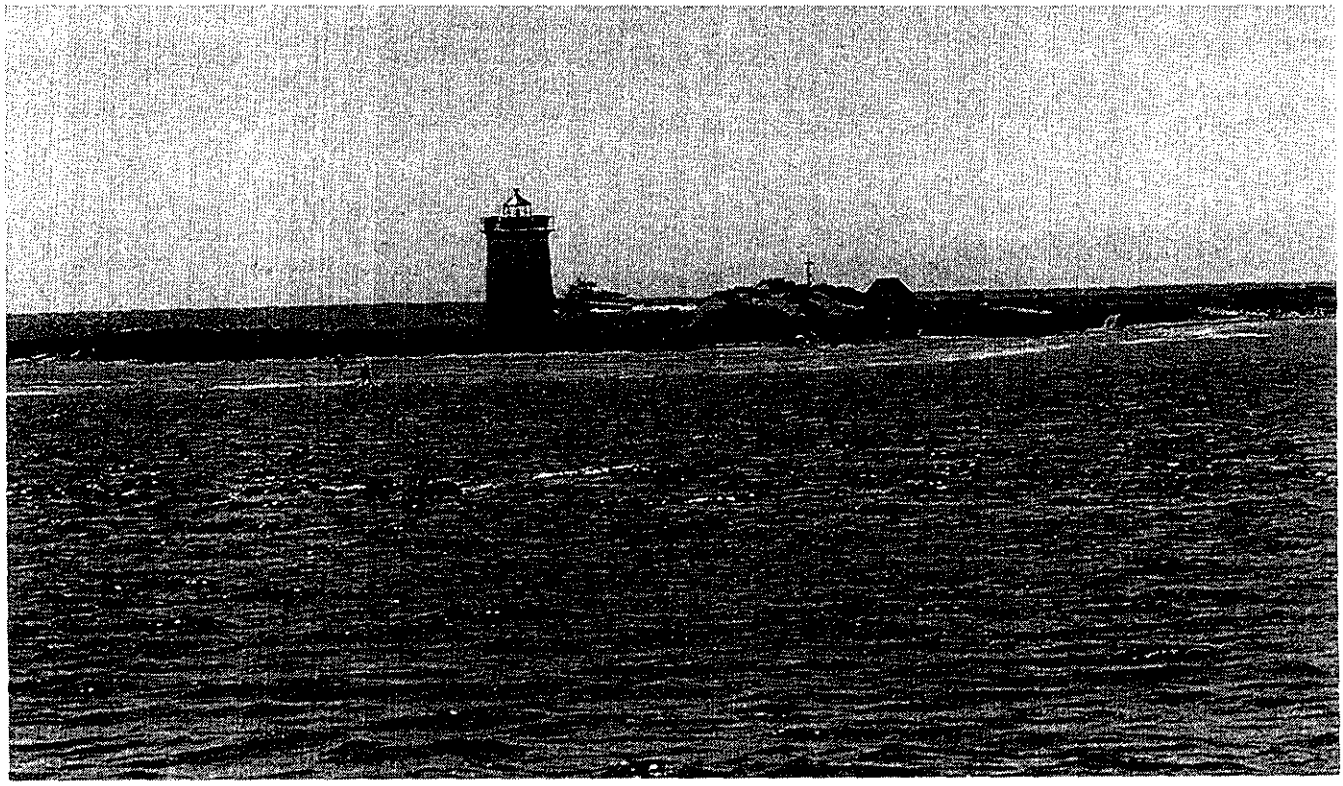
CONCLUSIONS AND RECOMMENDATIONS

for the former

LONG POINT BATTERY

Provincetown, MA
Project Number D01MA054901

January 1997



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DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
for
FORMERLY USED DEFENSE SITES

CONCLUSIONS AND RECOMMENDATIONS

ORDNANCE AND EXPLOSIVE WASTE ARCHIVES SEARCH REPORT for the former LONG POINT BATTERY PROVINCETOWN, MASSACHUSETTS PROJECT NO. D01MA054901

January 1997

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ORDNANCE AND EXPLOSIVE WASTE
ARCHIVES SEARCH REPORT
for the former
LONG POINT BATTERY
PROVINCETOWN, MASSACHUSETTS
PROJECT NO. D01MA054901

ACKNOWLEDGMENT

The following persons provided support as indicated.

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ORDNANCE AND EXPLOSIVE WASTE
ARCHIVES SEARCH REPORT
for the former
LONG POINT BATTERY
PROVINCETOWN, MASSACHUSETTS
PROJECT NO. D01MA054901

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are provided by the Archives Search Report Team. These recommendations may not be the actions taken to remediate this site.

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ORDNANCE AND EXPLOSIVE WASTE
ARCHIVES SEARCH REPORT
FOR THE FORMER
LONG POINT BATTERY
PROVINCETOWN, MASSACHUSETTS
PROJECT NO. D01MA054901

1. INTRODUCTION

a. Subject and Purpose

(1) This report presents the conclusions and recommendations of an historical records search and site inspection for ordnance and explosives (OE) presence located at the former Long Point Battery, Provincetown, MA. The investigation was performed under the authority of the Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP/FUDS).

(2) The investigation focused on approximately 150 acres of land that was used by the Army as a coastal battery on Long Point, MA, during the Civil War.

(3) The purpose of this investigation was to characterize the site for potential OE contamination, to include conventional and chemical warfare material (CWM). This was achieved through evaluation of all historical records available, interviews, and the on-site visual inspection results.

b. Scope

(1) This report presents the site history, site description, real estate ownership information, and confirmed ordnance presence based on available records, interviews, and the site inspection. It further provides a complete evaluation of all information to assess actual and potential current day ordnance contamination.

(2) For the purpose of this report, OE contamination consists of live ammunition, live ammunition components, CWM or explosives which have been lost, abandoned, discarded, buried, fired, or thrown from demolition pits or burning pads. These items were either manufactured, purchased, stored, used, and/or disposed of by the War Department (WD)/Depart of Defense (DOD). Such ammunition/components are no longer under accountable record control of any DOD organization or activity.

(3) **Expended** small arms ammunition (.50 cal or smaller) is **not** considered OE contamination. OE further includes "explosive soil" which refers to any mixture in soil, sands, clays, etc., such that the mixture itself is explosive. Generally, 10 percent or more by weight of secondary explosives in a soil mixture is considered explosive soil.

2. CONCLUSIONS.

a. Summary of Conclusions

Table 2-1 on the following page has been provided to summarize conclusions made on confirmed and potential OE on the former Long Point Battery.

b. Historical Site Summary

(1) Since inadequate harbor fortifications allowed the British navy to control many American ports during the War of 1812, the United States Army sought to correct the deficiency by building a series of forts along the eastern seaboard.

(2) Provincetown Harbor was surveyed between 1833 and 1835 for the building of fortifications. Prior to construction of the Long Point Battery, the point had a large civilian population, but was deserted by the time construction of two earthwork batteries began in early 1863. Construction was completed in December of 1863. The outer battery consisted of three 32 pound guns and a built-in powder magazine. The inner battery, connected to the outer battery by a 1,650 foot wooden walkway, consisted of six 32 pound guns, and two built-in magazines. A barracks for quartering a company of soldiers, an officers quarters, and stables were constructed south of the inner battery (see plates 1, 2, and 3).

(3) On March 5 1864, the Commonwealth of Massachusetts ceded what was described as an indefinite area (approximately 150 acres) for the erection of fortifications. The batteries saw no action during the Civil War, and were abandoned in 1872. The batteries fell into disrepair following 1872 and a Cod Oil factory was built in the area that had been the barracks, circa 1874. As the factory was on a military reservation, efforts were taken for years to have it removed. As of 15 May 1883, the factory was still in place, but no mention of it is made in official correspondence dated 1917.

TABLE 2-1
SUMMARY OF CONCLUSIONS

Area	Former Usage	Present Usage	Probable End Usage	Size Acres*	FUDS ELIGIBILITY		ORDNANCE PRESENCE			
					Confirmed FUDS	Potential FUDS	Confirmed Ordnance	Potential Ordnance	Uncontaminated	Risk Assessment Code
A	Outer Battery	Cape Cod National Sea Shore	Cape Cod National Sea Shore	0.25	Yes	-	-	-	Yes	5
B	Walkway	Cape Cod National Sea Shore	Cape Cod National Sea Shore	1.00	Yes	-	-	-	Yes	5
C	Inner Battery	Cape Cod National Sea Shore	Cape Cod National Sea Shore	0.50	Yes	-	-	-	Yes	5
D	Barracks	Cape Cod National Sea Shore	Cape Cod National Sea Shore	0.50	Yes	-	-	-	Yes	5
E	Remaining Land	Cape Cod National Sea Shore	Cape Cod National Sea Shore	17.75	Yes	-	-	-	Yes	5
E	Remaining Land	Cape Cod National Sea Shore	Cape Cod National Sea Shore	130.00	No	Yes	-	-	Yes	5
TOTAL ACREAGE				150.00						

*Acreage is approximate

(4) The War Department transferred ownership of Long Point to the Navy in May of 1917, for use as a Naval Air Station. No record was found of any use of Long Point by the Navy. With the exception of 18.04 acres retained by the U.S. Government for a lighthouse, Coast Guard Station, and range beacons, Long Point was returned to the Commonwealth of Massachusetts on 21 June 1927.

(5) On 2 April 1963, The Commonwealth of Massachusetts ceded a large parcel of land to the United States for incorporation into the Cape Cod National Seashore. The parcel included the land returned to the Commonwealth in 1927. To date, Long Point continues to be owned by the U.S. Department of the Interior.

c. Site Eligibility

Former land usage by the Army was previously confirmed as 20 acres by the FDE. Actual acreage was approximately 150 acres as summarized in sections 2.b.(1) through (5) of this report. The site remained active until abandoned in 1872.

d. Visual Site Inspection

(1) The entire site is open to the public, with access gained either by boat or by walking across the breakwater from Provincetown. It is part of the Cape Cod National Sea Shore (see plate 1).

(2) Long Point is a narrow spit of land, only a few hundred yards across at its widest point. The batteries are found at the end of the point, with the outer battery being just south of the Long Point Lighthouse. Nothing remains of the battery except a pile of sand covered with scrub vegetation and a memorial commemorating the death of a soldier during WW II (see plates 2 and 3).

(3) Nothing remains of the 1,650 foot walkway that connected the outer and inner batteries. The inner battery is in the same condition as the outer battery: Just a pile of sand covered with vegetation (see plates 2 and 3).

(4) Nothing remains of the barracks, officers quarters, stables, or the Cod Oil factory that was built in the area of the barracks following the departure of the Army.

(5) The whole of Long Point is covered with debris, both from parties on the point and material washed up from the sea. Shotgun shells are prominent, giving evidence to frequent target practice taking place on the point.

e. Confirmed Ordnance Areas

(1) Confirmation of ordnance presence is based on verifiable historical evidence or direct witness of ordnance items.

(2) Although there was a report of a Civil War era musket being found in the vicinity of the outer battery, no other relics have ever been found and no OE has ever been found except for a few .45 caliber rounds (not Civil War ammunition) found at the opposite end of the site from the batteries. Speculation is that the .45 caliber ammunition came from the Coast Guard Station or from someone taking target practice.

(3) There are no areas with confirmed ordnance.

f. Potential Ordnance Areas

(1) Potential ordnance contamination is based on a lack of confirmed ordnance. Potential ordnance contamination is inferred from records or indirect witness. Inference from historical records would include common practice in production, storage, usage, or disposal, at that time, which could have allowed present day ordnance contamination.

(2) It is very probable that the Army took their munitions with them when they left the site in 1872.

(3) In the 124 years since the Army left, there have been no reports of any site related OE being found.

(4) There are no areas containing potential contamination.

g. Uncontaminated Areas

(1) Uncontaminated ordnance subsites are based on a lack of confirmed or potential ordnance evidence.

(2) Areas A, B, C, D, and E are considered to be **uncontaminated**.

h. Other Environmental Hazards

There was no evidence of any other environmental hazards at the site.

3. RECOMMENDATIONS

a. Summary of Recommendations

Table 3-1 on the following page includes an overall summary of the site recommendations. Explanations are included in subsequent paragraphs.

b. Preliminary Assessment Actions

The Preliminary Assessment of the former Long Point Battery and Findings and Determination of Eligibility (FDE) described the site as approximately 20 acres rather than the 150 acres ceded to the U.S. Army. Recommend that the INPR be modified to reflect 150 acres more or less.

c. Ordnance and Explosive Waste Actions

No further action is recommended.

d. Other Environmental Remediation Actions

No other actions are recommended.

TABLE 3-1
SUMMARY OF RECOMMENDATIONS

Area	Former Usage	Size Acres*	PA ACTIONS	OE ACTIONS			HTRW ACTIONS	BD/DR ACTIONS
			Prepare INPR	No Further Action	Implement IRA	Further Action	Perform EE/CA	Perform SI	Perform SI
A	Outer Battery	0.25	-	Yes	-	-	-	-	-
B	Walkway Gun Site	1.00	-	Yes	-	-	-	-	-
C	Inner Battery	0.50	-	Yes	-	-	-	-	-
D	Barracks Gun Site	0.50	-	Yes	-	-	-	-	-
E	Remaining Land	147.25	-	Yes	-	-	-	-	-
TOTAL ACREAGE		150.00							

*Acreage is approximate

ORDNANCE AND EXPLOSIVES ARCHIVES SEARCH REPORTS for the former LONG POINT BATTERY PROVINCETOWN, MA PROJECT NUMBER D01MA054901

ATTACHMENT A

RISK ASSESSMENT, AREAS A, B, C, D, AND E

17 Mar 95
Previous editions obsolete

RISK ASSESSMENT PROCEDURES FOR
ORDNANCE AND EXPLOSIVE (OE) SITES

Site Name	Long Point Battery	Rater's Name	Michael D. Patterson
Site Location	Provincetown, MA	Phone No.	(815) 273-8763
DERP Project #	D01MA054901	Organization	CENCR-ED-DO SIOAC-ESL
Date Completed	10 October 1996	Area:	A, B, C, D, and E
		Rack Score	5

OE RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OE risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OE hazards identified at the site. The risk assessment is composed of two factors, **hazard severity and hazard probability**. Personnel involved in visits to potential OE sites should view the CEHND video tape entitled "A Life Threatening Encounter: OE."
Part 1. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPES OF ORDNANCE(Circle all values that apply)

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20 mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms, Complete round (.22 cal - .50 cal)	1
Small Arms, Expended	

Conventional Ordnance and Ammunition (0)

(Select the largest single value)

What evidence do you have regarding conventional OE? Historical evidence indicates use of 32 pound cannon and small arms only. No evidence of any left on site.

B. Pyrotechnics. (For munitions not described above)

	VALUE
Munition (Container) Containing White Phosphorous or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munition Containing a Flame or Incendiary Material (i.e., Napalm, Triethlaluminum Metal Incendiaries)	6
Flares, Signals, Simulators, Screening Smoke (other than WP)	4
Pyrotechnics (Select the largest single value)	(0)

What evidence do you have regarding pyrotechnics? No evidence of any use.

C. Bulk High Explosives (Not an integral part of conventional ordnance; uncontainerized.)

	VALUE
Primary or Initiating Explosive (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.) Demolition Charges	10
Secondary Explosives (PETN, Composition A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc).	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc).	3
High Explosives (Select the largest single value)	(0)

What evidence do you have regarding bulk explosives? There is no evidence of any type of bulk explosives being left on the site.

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized)

	VALUE
Solid or Liquid Propellants	6
Propellants	0

What evidence do you have regarding propellants? No evidence.

E. Chemical Warfare Material and Radiological Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification Sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear)	5

Chemical and Radiological (Select the largest single value) (0)

What evidence do you have of chemical/radiological OE? No evidence.

TOTAL HAZARD SEVERITY VALUE (0)

(Sum of Largest Values for A through E--Maximum of 61).
Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	10 to 20
MARGINAL	III	5 to 9
NEGLIGIBLE	IV	1 to 4
**NONE		(0)

* Apply Hazard Severity Category to Table 3.

** If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC score of 5 to determine your appropriate action.

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

RAC 1 Expedite INPR, recommending further action by CEHND - Immediately call CEHND-ED-SY--commercial 205-955-4968 or DSN 645-4968.

RAC 2 High priority on completion of INPR - Recommend further action by CEHND.

RAC 3 Complete INPR - Recommend further action by CEHND.

RAC 4 Complete INPR - Recommend further action by CEHND.

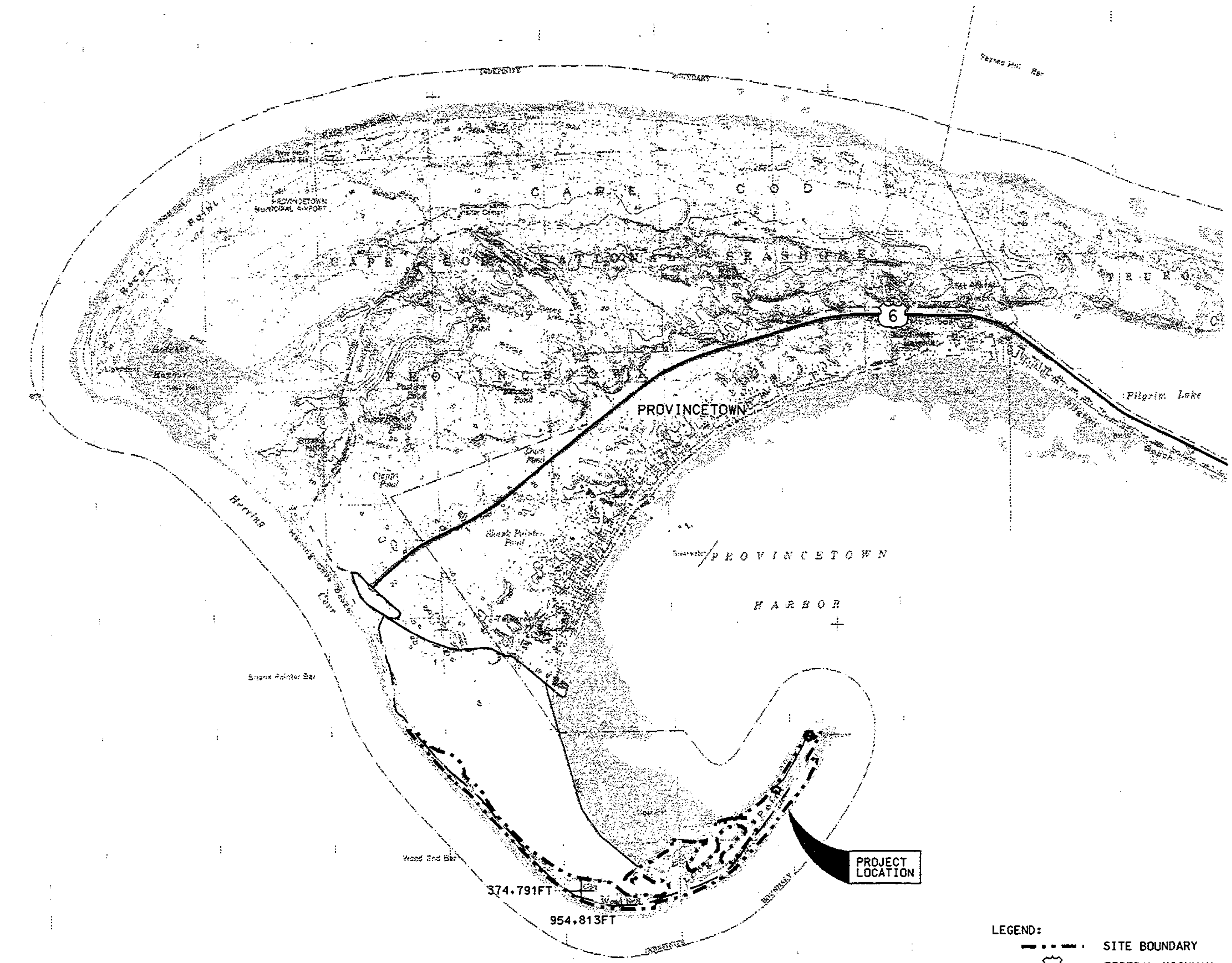
RAC 5 Usually indicates that no further action (NOFA) is necessary. Submit NOFA and RAC to CEHND.

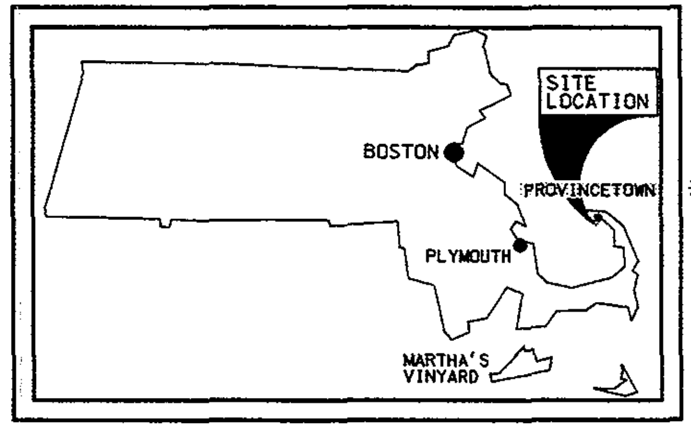
Part IV. Narrative. Summarize the documented evidence that support this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Historical evidence indicates that the site was used as an Army coastal defense site. The site was armed with nine 32 pound cannon utilizing both solid and case shot, propelled by black powder propelling charges. The Army left the site in 1872. The site has been part of the Cape Cod National Sea Shore since 1963, and has been visited extensively by the public. Nothing has been found in the past 124 years except for a lone Civil War era musket and a few .45 caliber pistol rounds that were not associated in any way with the site. Any OE on site would have been taken by the Army when they left.

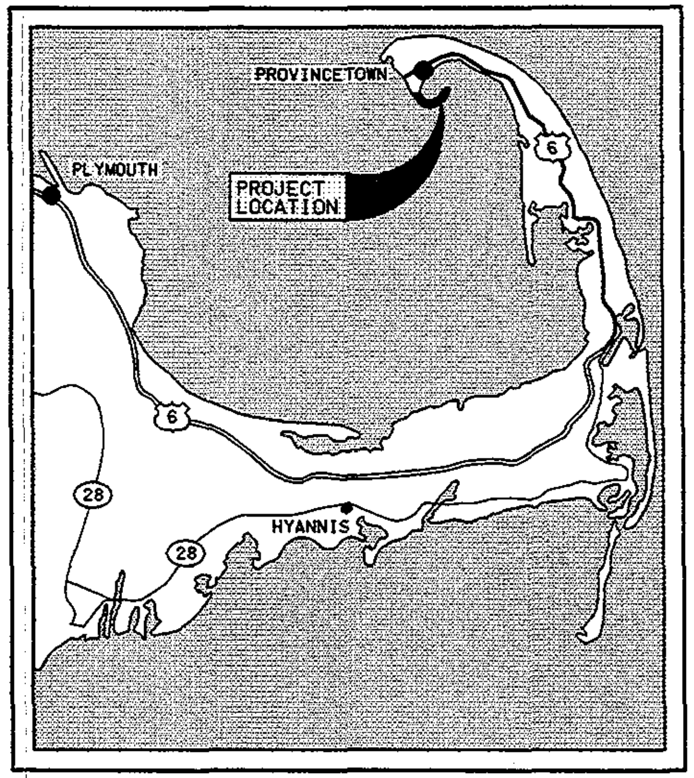
ORDNANCE AND EXPLOSIVE WASTE ARCHIVES SEARCH REPORT for the former LONG POINT BATTERY PROVINCETOWN, MASSACHUSETTS PROJECT NO. D01MA054901

REPORT PLATES





STATE MAP OF MASSACHUSETTS



VICINITY MAP

LEGEND:

- SITE BOUNDARY
- FEDERAL HIGHWAY
- STATE/LOCAL ROAD
- JEEP TRAIL
- STATE PLANE COORDINATES

1,500 750 0 1,500FT 3,000FT

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

Designed by: M. PATTERSON
Drawn by: T. GEERLINGS
Checked by: M. J. CIVIS
Reviewed by: R. E. HOFFMAN
Approved by:

US Army Corps of Engineers Rock Island District

LONG POINT BATTERY
(INNER AND OUTER)
PROVINCETOWN, MA.

SITE MAP

Scale:
Date:
Drawing Code:
Sheet reference number:
Project Number: D01MA0549

PLATE 1

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LIGHTHOUSE

OUTER BATTERY
(3 GUNS)

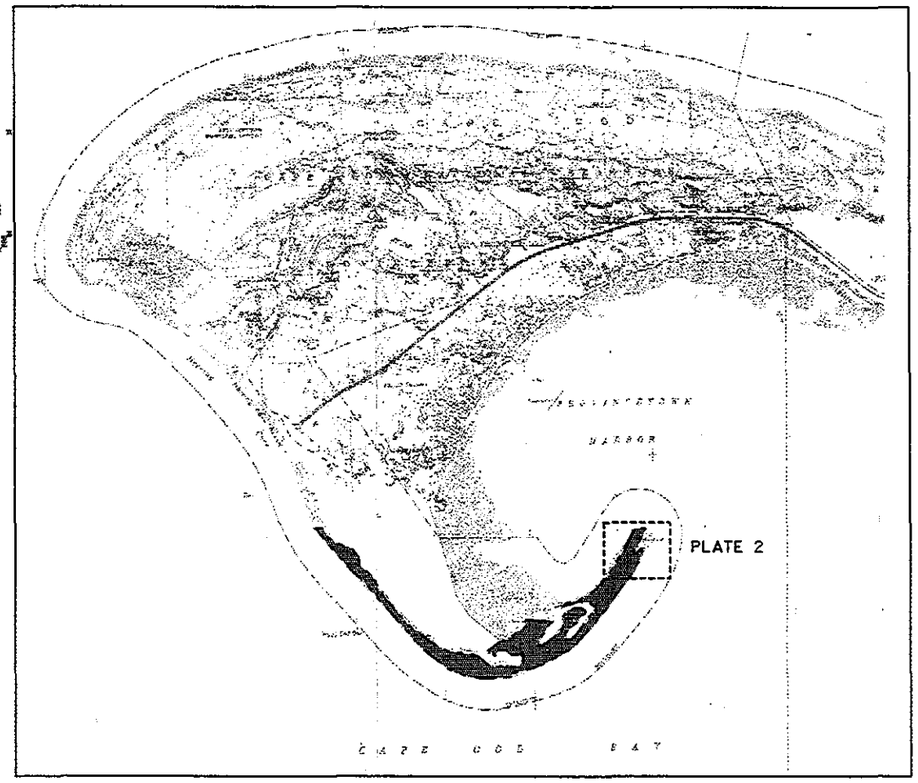
WALKWAY
1,650' X 5'

INNER BATTERY
(5 GUNS)

BARRACKS

STABLES

CAPE COD BAY



KEY PLAN

LEGEND:

SITE BOUNDARY

JEEP TRAIL

NOTE:

NO FIRING FANS ARE SHOWN AS THERE IS NO RECORD OF ANY COMBAT FIRE. AND ANY PRACTICE FIRE WOULD HAVE BEEN DONE WITH INERT SOLID SHOT (REF. D-4).

100 50 0 100FT 200FT

Revisions			
Symbol	Description	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

Designed by: M. PATTERSON	LONG POINT BATTERY (INNER AND OUTER) PROVINCETOWN, MA.
Drawn by: T. GEERLINGS	US army corps of Engineers Rock Island District
Checked by: M. J. CIVIS	FACILITY LAYOUT CIRCA 1865
Reviewed by: R. E. HOFFMAN	Scale:
Approved by:	Date:
	Drawing Code:
	Sheet reference number:
	Project Number: D01MA0549
	PLATE 2

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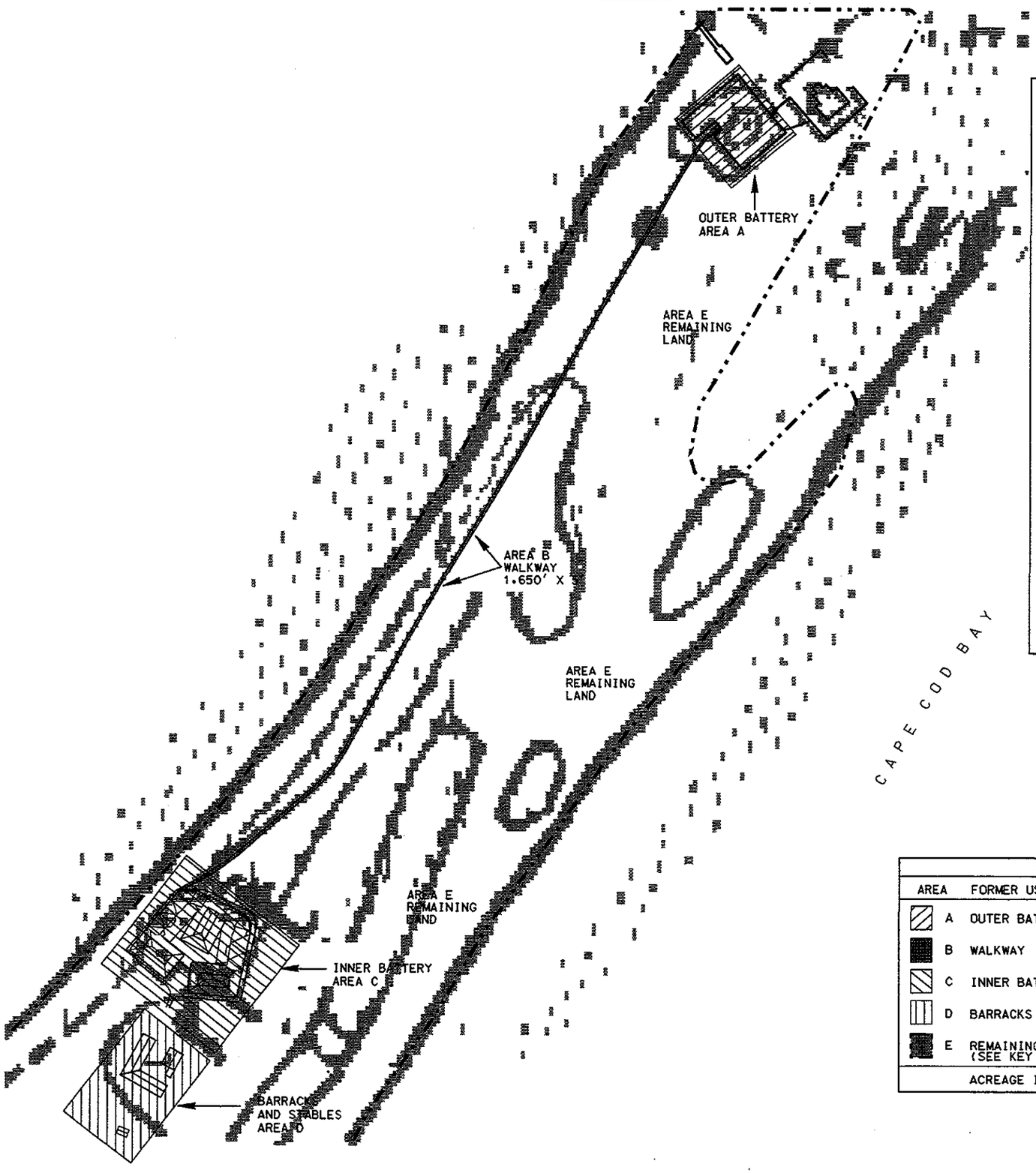

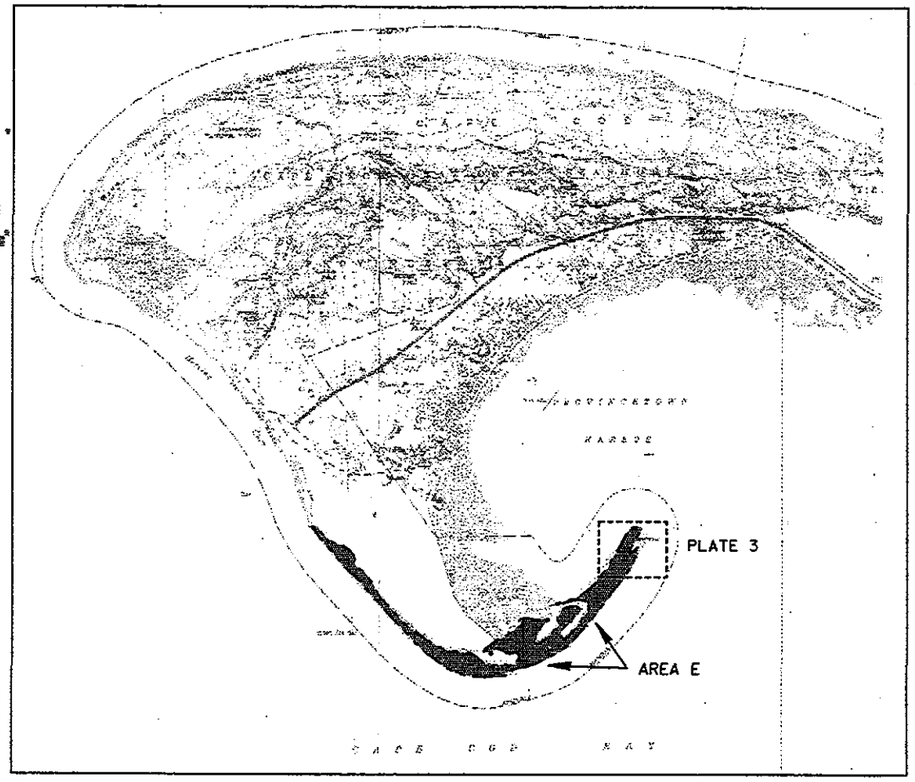

KEY PLAN

LEGEND:

SITE BOUNDARY

OE EVALUATION			
AREA	FORMER USEAGE	OE PRESENCE	ACREAGE
A	OUTER BATTERY	UNCONTAMINATED	.56
B	WALKWAY	UNCONTAMINATED	.23
C	INNER BATTERY	UNCONTAMINATED	1.5
D	BARRACKS	UNCONTAMINATED	.81
E	REMAINING LAND (SEE KEY PLAN)	UNCONTAMINATED	146.9
	ACREAGE IS APPROXIMATE	TOTAL	150

100 50 0 100FT 200FT

Revisions			
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U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

Designed by: M. PATTERSON
Drawn by: T. GEERLINGS
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Reviewed by: R. E. HOFFMAN
Approved by:

US Army Corps of Engineers Rock Island District

LONG POINT BATTERY
(INNER AND OUTER)
PROVINCETOWN, MA.

OE PROJECT AREAS

Scale:
Date:
Drawing Code:
Sheet reference number:
Project Number: D01MA0549
PLATE 3

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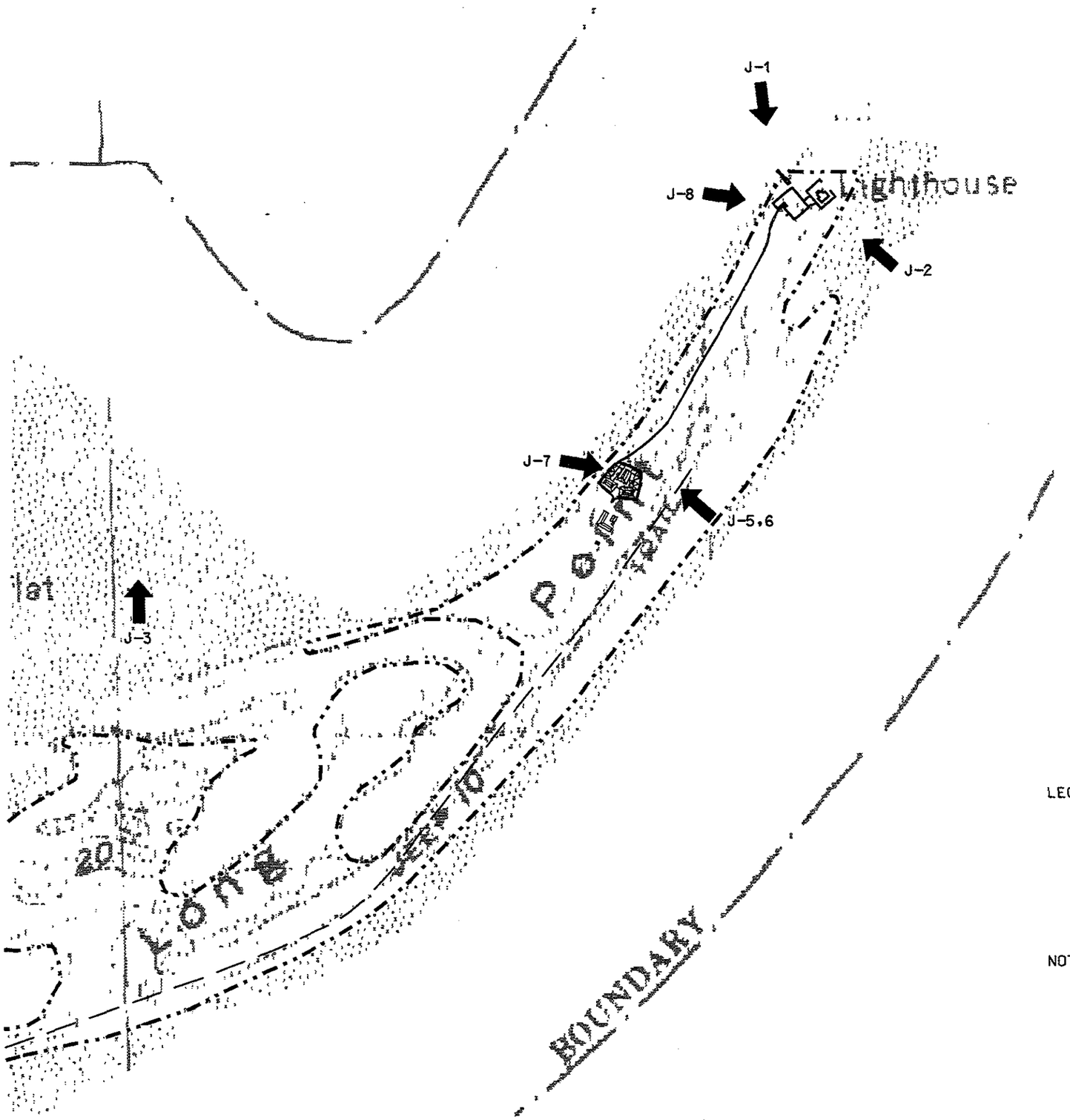

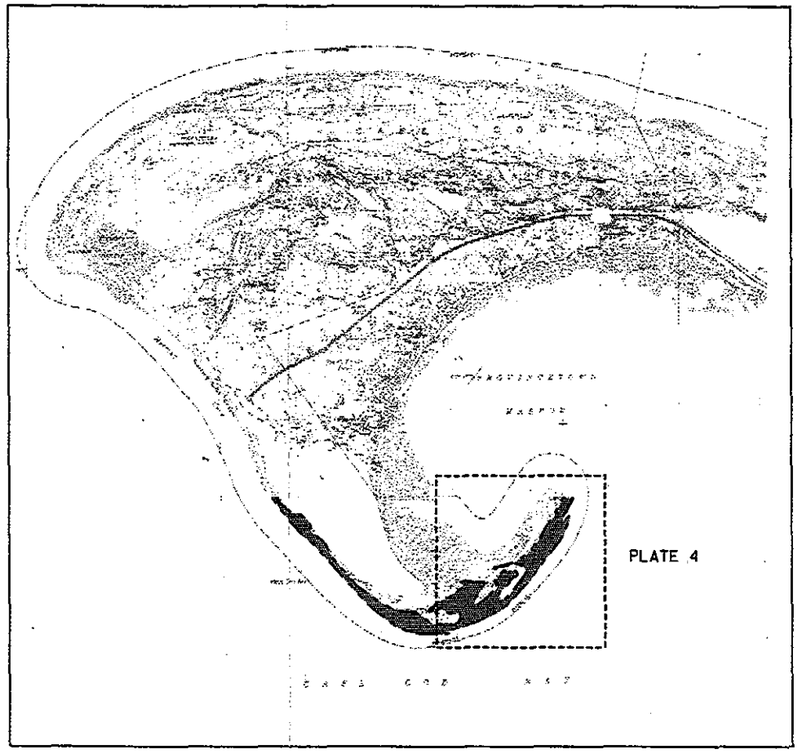

KEY PLAN

LEGEND:

- SITE BOUNDARY
- PHOTO LOCATIONS AND DIRECTIONS
- JEEP TRAIL

NOTES:

1. TOTAL SITE IS PART OF CAPE COD NATIONAL SEA SHORE. ADMINISTERED BY THE NATIONAL PARK SERVICE.
2. PHOTO J-4 IS OF A DRAWING FOUND IN PROVINCETOWN LIBRARY.

300 150 0 300FT 600FT

Revisions			
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ROCK ISLAND, ILLINOIS

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Drawn by: T. GEERLINGS	
Checked by: M. J. CIVIS	PHOTO LOCATIONS/ OWNERSHIP
Reviewed by: R. E. HOFFMAN	Scale:
Approved by:	Date:
	Drawing Code:
	Sheet reference number:
	Project Number: D01MA0549
	PLATE 4

US Army Corps of Engineers Rock Island District

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